

Intel's Plans For 1394

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1394 Complements USB

- The PCs of tomorrow need both connections
 - USB for low-cost, low-to-moderate speed connections
 - 1394 for video content from DVD, digital cameras, satellite decoders, disk drives, etc.
- 1394 is a serial interface that can provide video-speed bandwidth
 - 1394 is at 100-200 Mbps today
 - 1394 will evolve on a roadmap to 3.2 Gbps
 - USB tops out at 12 Mbps
- 1394 will enable to PC to enhance the user experience by connecting with advanced, digital in consumer electronics equipment currently available from major CE manufacturers
- Both USB and 1394 are plug-and-play, eliminate legacy connectors, and significantly simplify PC connectivity

1394 Benefits The End User, The PC Industry, And The CE Industry

- CE equipment existing today will be able to connect to the PC
 - IHVs and peripheral suppliers can develop one product to address CE and PC applications, both for OEMs and aftermarket
- Performance roadmap to 3+ Gpbs with backward compatibility to preserve consumer investment in 1394 equipment
- Extends plug-and-play ease-of-use to a video-speed bus

1394 Benefits the End User, the PC Industry, and the CE Industry

- **Enabler for next-generation platforms, e.g., PC Theater, Creativity PC, Device Bay, new approaches to notebook docking, and more**
- **Can reduce motherboard cost and advance performance by reducing real estate, improving routing, eliminating legacy I/O, improving thermal characteristics, etc.**
- **New applications and new users will increase demand for advanced PCs and advanced CE equipment**

1394 CE Devices Are Starting To Appear



MEI NV-DE3



Sony DCR-PC7



Sony DHR-1000



Sharp VL-DC3U



DPS Spark PC DV Editing System



Sony CCM-DS250

Other Products:

Sony DCR-VX1000/VX700 DVC

JVC GR-DVM1 DVC

Hitachi DSS

Hitachi DX815 DVCR

Panasonic DV-700/710 DVC

Pavio audio

Symbios "native" (IDE->1394) tailgate

Link/PHY sol'ns (many vendors)

*Other brands and names are the property of their respective owners.

Intel's Objectives For 1394

- Ensure that the PC is at the center of the digital convergence



Intel's Objectives For 1394

- Provide the PC platform with a high-speed plug-and-play serial interconnect
 - expand I/O bandwidth to the processor
 - enable high-bandwidth peripherals with rich content
 - deliver Connected Visual Computing
 - enable modular approaches to PC architecture like Device Bay

End-User Advantages Of PC-Centered Convergence

- The PC provides
 - Interactivity
 - Flexibility
 - An enhanced, new experience by combining CE devices
 - Centralized control
 - Host-based algorithmic / signal computing
 - Translating data types (e.g., MPEG2 to MPEG1)
 - Performing sample rate conversion (e.g., digital audio 44.1 kHz to 32 kHz)

End-User Advantages Of PC-Centered Convergence

- **Peripherals that employ host-based processing strategies can potentially be much more cost effective**
- **The PC is already a “connected device” supported by significant infrastructure**
 - **The PC can handle all the protocols required by interoperability**
 - **The PC can provide data buffering**

Intel's Commitment To 1394

- Intel supports the development of a market for 1394 peripherals interoperable with PCs
- Intel plans to build chipsets and motherboards to enable 1394
- Intel intends to develop building blocks for 1394 peripheral devices it believes will help enable the 1394 market
- Intel intends to become very active in 1394 PC platform compliance testing
- Intel is participating broadly in the 1394 Trade Association, the IEEE committees, and various working groups

Peer-To-Peer 1394 Connections

- Intel recognizes that some manufacturers may have interest in connecting peer-to-peer 1394 devices for specific tasks, e.g., a digital camera to a printer
- However, Intel believes a PC host adds tremendous value in most applications
 - Interactivity
 - Flexibility
 - Protocol handling for interoperability
 - File/data manipulation, enhancement, and type translation

Peer-To-Peer 1394 Connections

- **Peer-to-peer lacks infrastructure**
 - No defined APIs
- **Peer-to-peer may be very expensive to implement**
 - Large buffers
 - More expensive microcontrollers to handle the overhead
 - Lack flexibility for legacy and future interoperability requirements

Call To Action

- **Intel's commitment to 1394 does not by itself guarantee the success of 1394 in the PC environment**
 - PC OEMs won't bring 1394 out of box unless they see clear user demand for 1394-enabled PCs
 - Interoperability is an absolute requirement for success
- **Please help in developing compelling applications for 1394, the sooner the better**
- **Please help in ensuring interoperability**
 - Pay close attention to the specifications
 - Participate actively in sponsored plugfests and other compliance testing forums